AMENDMENT TO THE CLAIMS

COMPLETE LISTING OF CLAIMS, INCORPORATING AMENDMENTS

IN RESPONSE TO OFFICE ACTION DATED August 4, 2005

FOR SERIAL NO.10/663,052

We claim:

1. (Currently Amended) A process for removing metal from fluid, the process comprising:
   a) supplying an active metal sorbent; and
   b) contacting the fluid with the sorbent for a time sufficient for the metal to absorb to predetermined regions of the sorbent, wherein the active metal sorbent is selected from the group consisting of iridium, palladium, ruthenium and iridium-platinum alloy and the fluid is selected from the group consisting of flue gases and combustion gases.

2. (Original) The process as recited in claim 1 wherein the contacting step further comprises:
   a) relegating metal adsorption to an exterior surface of the sorbent; and
   b) allowing the relegated metal to diffuse into the interior of the sorbent.

3.(Original) The process as recited in claim 2 wherein the metal diffuses into the sorbent when the sorbent is heated to more than 150°C (300°F).

4. (Original) The process as recited in claim 1 wherein the metal to be adsorbed is a Group IIB metal selected from the group comprising of mercury, cadmium or a combination thereof.

5. (Previously amended) The process as recited in claim 1 wherein the temperature of the fluid ranges from approximately 170°C to 370°C (700°F).

6. (Canceled)

7. (Canceled)

8. (Original) The process as recited in claim 4 wherein the Group IIB ~~(12)~~ metal forms an amalgam with the metal in the sorbent.

9. (Original) The process as recited in claim 1 wherein the metal sorbent is a solid mass.

10. (Original) The process as recited in claim 9 wherein the active metal is dispersed throughout the solid mass.

11.(Original) The process as recited in claim 10 wherein the surface area of the solid mass is between approximately 1 m^2/gram to 1000 m^2/gram.

12. (Original) The process as recited in claim 1 wherein the metal sorbent is regenerated by heating to a temperature above 500°C (930°F).

13.(Currently amended) The process as recited in ~~claim 12~~ claim 4 wherein the Group IIB ~~(12)~~ metal is desorbed from the sorbent.

14. (Previously amended) A process for increasing the surface area of an active metal sorbent, the process comprising:

a) supplying a support with a surface area of between 1 m^2/g to 1000 m^2/g; and

b) depositing active metal sorbent on the support, wherein the active metal sorbent is selected from the group consisting of iridium, palladium, ruthenium and iridium-platinum alloy and the active metal is deposited on a support in a controlled atmosphere selected from the group consisting of argon (Ar), nitrogen (N_2), or a combination thereof.

15. (Original) The process as recited in claim 14 wherein the support is a high temperature tolerant material selected from a group consisting of activated carbon, alumina, aluminosilicates, silica, titania, zirconia, zeolite, or combinations thereof.

16. (Original) The process as recited in claim 14 wherein the support can withstand temperatures above 925°C (1700°F).

17. (Original) The process as recited in claim 14 wherein the deposited metal sorbent is a solid phase selected from the group consisting of extrudates, powders, pellets, or monoliths.

18. (Currently amended) ~~A process of~~ The process of claim 14 further comprising increasing the resistance of metal sorbents to chemical reaction, the process comprising alloying active metals, wherein the active metal sorbent is selected from the group consisting of iridium, palladium, ruthenium and iridium-platinum alloy..

19. (Canceled)

20.(Canceled)

21. (New) A process for increasing the surface area of an active metal sorbent, the process comprising:

a) supplying a support with a surface area of between 1 m^2/g to 1000 m^2/g; and

b) depositing active metal sorbent on the support, wherein the active metal sorbent is selected from the group consisting of iridium and ruthenium.

22.(New) The process as recited in claim 21 wherein the active metal is deposited on a support in a controlled atmosphere selected from the group consisting of argon (Ar), nitrogen (N_2), or a combination thereof.